

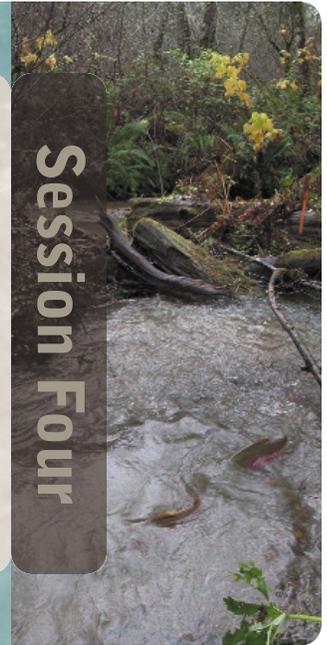
Instream treatment (e.g., woody debris, rootwads, boulders, side channels, pools, spawning gravel, nutrient augmentation), conversion to non-structural flood control (e.g., meander zones)

Overview and History of Instream and Floodplain Restoration in Western Oregon on Private Lands

MARK LACY

Oregon Dept of Fish and Wildlife
7118 NE Vandenberg Avenue
Corvallis, OR 97330
mark.lacy@state.or.us

Session Four



ABSTRACT

In 1996 the State of Oregon began what is known as the “Oregon Plan.” The Oregon Plan is a cooperative voluntary program to recover salmonids and overall watershed health for present and future generations of Oregonians. As a result of the Oregon Plan, the Western Oregon Habitat Restoration Project was created. It is a cooperative project between Oregon Wildlife Heritage Foundation, Oregon Forest Industries Council (OFIC), Watershed Councils, small urban or rural landowners, and Oregon Department of Fish and Wildlife (ODFW). The purpose of the program is to restore watershed health by addressing passage, roads, instream, and riparian floodplain habitats for salmonids and other indigenous native species.

INTRODUCTION

Between 1994 and 1999 ODFW wrote “Habitat Restoration Guides” for all coastal basins and the Willamette basin. It was a GIS query generated database using the Oregon Aquatic Inventory ODFW database to identify potential streams for large wood placement projects based on channel width, gradient, and reach type — constrained or unconstrained. The reports were reviewed by local ODFW District Biologists and additional sites were added based on information not available from the Aquatic Inventory database. The reports were then circulated to interested cooperators as a beginning point for restoration activities.

ODFW has been the technical partner and industry and councils have contributed access, materials, and equipment to complete the projects. After the coho and subsequent listing of other species (i.e. steelhead, chinook) under the Endangered Species Act (ESA) the cooperative funding sources have become more difficult to obtain. ODFW now continues to work with OFIC but we often write grants through Oregon Wildlife Heritage, ODFW Restoration and Enhancement, Oregon Watershed Enhancement, National Fish and Wildlife Foundation, USFWS Partners for Wildlife, Jobs in the Woods, NMFS Community Based Grants, Umpqua Derby, and other sources — to obtain the funding to implement the projects.

COSTS

In the following sections, cost factors for the following activities are addressed: restoration guide development and production, ground based restoration, aerial based restoration, high-lead cable system restoration, culverts, and legacy road improvements.

Planning Guide and Development

One basin restoration guide (1 biologist for 6 months @ \$3,500/mo)	\$21,000
Printing (\$40.00/guide times 50 copies)	\$2,000
Total	\$23,000

Annual Cost of Fully Funded Habitat Biologists

Currently the biologists work for ODFW with experimental biological aides (EBAs) to assist with monitoring. Personnel salaries (PS), services and supplies (SS) and capital outlay are funded through the Oregon Wildlife Heritage Foundation. Funding sources include ODFW Restoration and Enhancement Board, Oregon Watershed Enhancement Board and National Fish and Wildlife Foundation. The Willamette project received some funding from Portland General Electric and a grant from the Mt. Hood National Forest. The project coordinator position is not included in the table below.

7 Biologists in 00/01			Monitoring EBAs in 00/01		
PS	SS	Total	PS	SS	Total
\$333,289	\$66,658	\$399,947	\$152,093	\$30,419	\$182,512
/12 mo	/12 mo	/12 mo	/7 mo	/7 mo	/7 mo
\$27,774	\$5,555	\$33,329	\$21,728	\$4,346	\$26,073

Habitat Project Coordinator in 00/01		
PS	SS	Total
\$55,000	\$11,000	\$66,000
/12 mo	/12 mo	/12 mo
\$4,584	\$916	\$5,500

Total Project Costs

Biologists, Coordinator	\$465,947
Monitoring	\$182,512
Capital (computers, GIS, etc.)	\$6,000
Total/year	\$654,459

Implementation Cost Estimates for Ground Based Stream/Floodplain Enhancement Projects — Cooperative Project (Non-contract)

(Estimates are based on one (1) mile restoration stream segment on private industrial forest land in the Willamette basin.)

Design, layout, implementation for biologist — 160 hours for 1 person @ 40/hr	\$6,400
Implementation/staging/logistics, Company Rep — 16 hrs @ 50/hr	\$800
Equipment — log-loader/shovel @ 140.00/hr for 32 hrs	\$4,480
Equipment — skidder @ 50.00 hr for 32 hrs	\$1,600
Equipment Mobilization	\$1,000
Self loading log truck to move material @ 60/hr for 16 hrs	\$960
Material — logs or whole trees 120/mile @ 500.00/stick	\$60,000
Seeding and/or planting with labor @ 300/mile	\$300
Monitoring — stream survey/ biological	\$2,000
Photos, etc.	\$50
Total	\$77,590

Implementation Cost Estimates for Ground Based Stream/Floodplain Enhancement Projects — Cooperative Project (Contracted)

(Estimates are based on one (1) mile restoration stream segment on ODF lands in the Tillamook State Forest.)

Design and Layout, Biologist — 160 hours for 1 person @ 40/hr	\$ 6,400
Equipment — log-loader/shovel for mobilization, material prep, staging, and placement @ 140/hr for 80 hrs	\$11,200
Material — logs or whole trees 120/mile @ 500.00/stick	\$60,000
Seeding and/or planting with labor @ 300/mile	\$300
Contract preparation — 60 hrs at 40/hr	\$2,400
Monitoring — stream survey/ biological	\$2,000
Photos, etc.	\$50
Total	\$82,350

Reference — Lacy and field biologists

Aerial (Helicopter) Large Wood Placement

(This example was on Oregon Dept of Forestry State lands in the Tillamook State Forest.)

Design, layout, imp for Biologist — 320 hours for 1 person @ 40/hr	\$12,800
Implementation/staging/logistics, Company Rep — 16 hrs @ 50/hr	\$800
Equipment — “vertel ship” and ground crew, payload 11,000 lbs for 12 hrs @3,571/hr	\$42,852
Equipment — spotter helicopter in dense canopy 13 hrs @525/hr	\$6,825
Equipment — trac-hoe to push trees over for 40 hrs @ 100/hr	\$4,000
Supplies — cable, ribbon	\$3,828
Material — logs or whole trees (on site) 120/mile @ 500.00/stick	\$60,000
Monitoring — stream survey/ biological	\$2,000
Photos, etc.	\$50
Total	\$133,155

Reference — Lacy, Plawman

Aerial (Helicopter) Large Wood Placement

(This example was on USFS Federal lands in the Umpqua National Forest for 8 stream miles and using 584 trees.)

Design and Layout, Biologist — 320 hours for 1 person @ 40/hr	\$ 12,800
Equipment — “chinook ship”, and ground crew, payload 25,000 lbs for 36 hrs @7,200/hr ¹	\$259,200
Material — logs or whole trees and staging 584/tree @ 120/stick	\$ 70,080
Implementation team — 6 bios for 32 hrs @ 40/hr	\$ 7,680
Overhead team — road guards, fire 5 members for 32 hrs @ 30/hr	\$ 4,800
Contract prep, printing, misc	\$ 9,500
Monitoring — stream survey/ biological	\$ 16,000
Photos, etc.	\$ 550
Total	\$380,610
(per mile)	(\$ 47,576.25)

1- The chinook generally flies for \$9,000–\$12,000. This contract is a multiple year contract.

Reference — Lacy, Harkelroad

High Lead Cable Large Wood Placement Projects (as Part of a Timber Operation without Separate Turns)

(A turn is defined as an active lane that the cable is suspended above during the timber harvest operation without changing the angle, deflection, or haul back. The wood is placed in the existing system.)

Estimates are based on one (1) mile restoration stream segments

Design and Layout, Biologist — 40 hours for 1 person @ 40/hr	\$1,000
Implementation/staging/logistics, Company Rep — 16 hrs @ 50/hr	\$800
Equipment and labor — tower, loggers	\$600
Equipment Mobilization	\$0
Material — logs or whole trees (on site) 120/mile @ 400.00/stick	\$48,000
.Monitoring — stream survey/ biological	\$2,000
Photos, etc.	\$50
Total	\$52,450

High Lead Cable Large Wood Placement Projects (as Part of a Timber Operation with Separate Turns)

(A turn is defined as an active lane that the cable is suspended above during the timber harvest operation, but making specific settings to place the wood outside of the harvest corridors.)

Estimates are based on one(1) mile restoration stream segments

Design and Layout, Biologist — 40 hours for 1 person @ 40/hr	\$1,000
Implementation/staging/logistics, Company Rep — 16 hrs @ 50/hr	\$800
Equipment and labor — tower, loggers	\$4,000
Equipment Mobilization	\$0
Material — logs or whole trees (on site) 120/mile @ 400.00/stick	\$48,000
Monitoring — stream survey/ biological	\$2,000
Photos, etc.	\$50
Total	\$55,850

Reference — Lacy, Workman

Culverts and Bridges on Private Industrial Lands

(Provided by Jerry Workman, Forest Engineer, Willamette Industries, Lebanon, Oregon.)

Cross drain culverts (includes time and materials) — 18" 6.50/foot average of 30 feet	\$195
Culverts (includes time and material) — 36" 14.00/foot average of 40 feet	\$560
Culverts (includes time and material) — 60" 30.00/foot average of 40 feet	\$1,200
Culverts (includes time and material) — 40 % buried, 60" 150.00/foot average of 40 feet	\$6,000
Baffled Culverts (includes time and material), 10 foot 300.00/foot average of 40 feet	\$12,000
Baffled Open Bottom Culverts without concrete footings (includes time and material), 12 foot 750.00/foot average of 40 feet	\$30,000
Open Bottomed Culvert with concrete footings (includes time and material), 18 foot 900.00/foot average of 40 feet	\$36,000
Bridge — 12 feet wide, concrete, (includes time and materials) 2,000.00/foot average of 50 feet	\$100,000

